Managing Bank Performance

Course 2044

Paul Allen

May 20 - 24

2019 Session
Graduate School of Banking
at Louisiana State University

Managing Bank Performance
May 2019

Paul S. Allen, CPA, CGMA, Shareholder
Saltmarsh, Cleveland & Gund

Agenda By Day

• Monday: Introduction, Getting Everyone on the Same Page, Basic Overview to Bank Financials
• Tuesday: The Use of Ratios and Metrics to Express, Measure and Monitor Bank Performance
• Wednesday: A Deeper Dive into Ratios and Peer Analysis
• Thursday: Other Considerations, including IRR, Liquidity and ERM
• Friday: Wrap Up and Summary; Review of Test Questions
Day One: Introduction and Overview of Bank Financial Statements

- Welcome; introduction, framing of what we’re trying to accomplish
  - General background on organization and content of financial statements
  - How bank financials are different, and the same, as financials for other types of businesses
  - The different types of financial reporting for a bank
    - Call Reports
    - Audited Financials with Footnotes
    - Shareholder Report with Management Presentations
    - SEC Fillings (Annual, Quarterly, Form 8K, Prospectus)
  - We will focus primarily on the Call Report for our Peer Analysis and Ratio Analysis

WHY so much focus on the **BALANCE SHEET**, versus the **INCOME STATEMENT??**

- That’s a great question, right?
- How do we introduce ourselves as bankers?
- How do you introduce yourself as a nonbanker?
- *How would you define what we actually do as bankers?*
Balance Sheet = What We Do

- Assets = what we invest in/accumulate with other peoples' funds; what we manage to derive a profit
- Liabilities & Equity = the way we fund the assets we accumulate
  - Liabilities=temporary funding
  - Equity=permanent funding
- Key Point: most bank performance ratios use balance sheet components as either the numerator or denominator

Income Statement=How Well Did We Do?

- The income statement measures how well/profitably/effectively the banker has managed the oversight of the assets held by the Bank
- Note the profitability measures: Return on Equity and Return on Assets
- Balance Sheet: Measured at a point in time
- Income Statement: Measured over a period of time
- Brief Mention: Other Comprehensive Income
Quick Overview of “Financial Statements”

- “Classic” set of financials
- Difference between audited statements versus Call Report
- Regulatory Reporting versus GAAP
- Footnotes to the Financials - purpose, and what’s in them

Major Asset Components

- Key point - Assets section “lists” all of the various types and amounts of assets that the Bank is charged with the responsibility of stewardship over
- Cash and Cash Equivalents
- Investment Securities
- Loans Receivable
- Premises and Equipment, Software
  - Foreclosed Real Estate or Other Assets
  - Deferred Tax Assets
  - Other Assets
- Key Point for Managing Performance: Difference between-
  - Earning Assets
  - Non-earning Assets
Key Strategic Points - Assets

- From the Asset Section, we can determine:
- Broad strategic direction of bank (what type of lending/assets are being acquired? How are bank resources being used?)
- Liquidity levels/relative strength and dry powder for future growth
- Some indication of Asset Quality levels (levels of Investment unrealized gains or losses; relative coverage of credit exposure by ALLL; levels of deferred tax assets to be dealt with in the future)
- Total assets is one of the most common ways to “classify” a bank

Major Components of Liabilities

- Core versus Non-Core Funding Concept
- Deposits
  - Non maturity – checking, NOW, MMDA, non-time savings deposits (“transaction accounts”)
  - Time deposits – certificates of deposit
    - Brokered deposits; jumbo deposits, Internet rate board deposits
    - FHLB Advances and other borrowed funds
    - Subordinated Debentures
    - Accrued and other liabilities (including taxes payable)
Major Components of Equity

- Equity, Capital, Regulatory Capital
- Stockholders equity
  - Par value of common stock
  - Preferred stock vs common stock
  - Additional paid in capital
  - Retained earnings
  - Other comprehensive income
  - Treasury stock
    - Quick recap of capital versus regulatory capital
    - Discussion – “book value per share”

Key Strategic Points - Liabilities and Equity

- Liabilities plus equity always equal total assets
- Total assets are owned by either the stockholders or the creditors (or both)
- Liabilities and equity (or, capital) tells us how the bank funded the acquisition of the assets it manages
- No Free Lunch Rule: all funding costs us something
Income Statement Components

- Interest Income
- Interest Expense
- Subtotal: Net Interest Margin
- Provision for Loan Loss
  - Comment: Negative provision is a "credit provision"; recent trends
- Noninterest Income
  - Includes most fee income, any gain on loans or securities, includes income from Trust, Wealth Management, Loan Servicing
- Noninterest Expense
  - The "operating cost" of running the Bank
  - Largest component is normally Compensation
- Taxes
  - Comment: 1/3 of banks are Sub S, so not taxable at the Bank level; comment on performance of Sub S banks versus comparably sized community banks
- Net Income
- Brief Comments on Comprehensive Income, versus Net Income

Bank Income: Breaking it Down

Spread Income

Balance Sheet Utilization

- Loans/Deposits
- Earning Assets / Assets

Asset Mix  Funding Mix

- Loans
- Investments
- Other Earning Assets
- Non-Earning Assets

Yields & Costs

- Investments
- Loans
- Key Types

Other Revenue

Deposit Related

- Service Charges
- Other Lines of Business
- Mortgage
- SBA
- Trust

Market Driven

Opt-In

Manage/Plan: Most Control?

OH Expenses

Operating Overhead

- Personnel
- Branches / Occupancy
- Other Overhead

Operating Effectiveness

- Assets/Employee
- Revenue/Employee
- Net Operating Ratio
- Deposit/Branch

Most Direct

Courtesy of Shawn O'Brien, President,
QuickLine Analytics
Class exercise

- Refer to the Bank Income: Breaking it Down
- Describe the Income Statement impact of a deposit growth strategy to raise $20 million in nonmaturity deposits, to pay off $10 million in brokered CD's, and grow the CRE Loan portfolio by $10 million; what components are impacted? (Class discussion)
- Describe the Income Statement impact of closing two small, struggling branches (assume breakeven on sale of offices) Class discussion
- Your bank's loan to deposit ratio is much lower than peer; how can you improve that ratio? Describe your strategy, and the possible impact to the Income Statement

Day Two: The Use of Ratios and Metrics to Express, Measure and Monitor

- Managing Bank Performance - Why Bother?
  - To Increase Shareholder Loyalty
  - To Provide Dependable Source of New Capital
  - It affects your retirement (or should)!
  - To Improve Bank Valuation
  - Improving Bank Valuation and Regulator Contentment are Mutually Aligned
- Why Ratios? What Ratios, and what do I do with them?
Components of Bank Valuation-
What makes a bank valuable?
- Quality of Earnings
- Capital and Capital Make-up
- Asset Quality
- Core Deposits- Deposit Mix
- Image of Bank in Community
- How well Bank Stock is Marketed
- Possess Several Dominant Strategies
- Employee Culture – Maintain the Quality Employees in a bank

Thoughts to Consider...
- Community Bank Shareholders are more patient than Large, Money Center Bank Shareholders
- You can never determine good or bad from one bank ratio (ROA, LLR Efficiency Ratio, NIM, Overhead Ratio, ROE, etc)
- How can a bank have consistently more income than those in it’s peer group?
- How can the Overhead to Assets ratio decrease and the Efficiency Ratio increase?
Thoughts to Consider (cont'd..............)

- What are the new pressures on bank earnings today?
- What are the “dominant strategies” your bank possesses?
- You would never run your car the same speed when your instrument panel’s warning lights say your car is overheating, running low on gas, running low on oil, or has brake failure - so why would we ignore the “warning lights” on our bank’s performance?
- So just what are the “warning lights” for how well our bank is performing?

Peer Analysis

- Concept – to compare our bank’s financial performance and balance sheet structure to other peer banks
- FDIC Call Report Info – UBPR (Uniform Bank Performance Reports) is ONE way of comparing peer banks
- Important Question: WHO is my peer?
Peer Performance Data: Why?

- **BECAUSE YOU CAN:** The Call Reports require quarterly reporting in excruciating detail – take advantage of it!
- **BECAUSE YOU CAN:** Reams of public data available on EVERY competitor
  - Private or public, small or large – HUGE LUXURY!
- **BECAUSE YOU CAN:** "Common sizing" the data permits you to compare the largest banks in the USA with your bank, or any size bank in the USA

Why Should You Care? To Survive & Thrive

- **Identify Strengths & Weaknesses:** compare your bank against specific local peers (or best performing peers anywhere)
  - SWOT Analysis
  - What is your "Financial Story"?
  - And has that changed over time?

- **Understand Local Market Trends:** are competitors suffering similar loan pricing pressure? Are they growing faster than you? Is the overall market growing?

- **Get Objective Data:** Public peer data, not necessarily filtered by management, is a critical tool to measure performance

- **Stay Ahead of Regulators:** Know how you stack up in the eyes of the regulators (OUTLIERS), and understand what regulators are likely to criticize ahead of time
Examples of Peer Analysis Measures

- Deposits per branch
- ROE and/or ROA
- Service Charges as % of Average Assets
- Loan Yield (Avg Rate and Avg Life in Years)
- Investment Yield (Avg Yield and Avg Life in Yrs)
- FTEs divided by Average Assets
- Core Funding as % of Funds Employed
- Regulatory Capital Ratios

Typical Bank Financial Ratios

- **Performance**: Return on Equity, Return on Assets, Efficiency Ratio (Noninterest Expense divided by Total Revenues; that is, Operating Expenses divided by the sum of Interest Income plus Noninterest Income)
- **Funding**: Loans to Deposits; Core Funds to Total Funds Employed; Liquidity Ratio (Cash, FF Sold, Investments less pledged, divided by total liabilities); Broketed deposits to Total Deposits
- **Credit Quality**: Reserve to Loans; NPL to Loans; NPA to Assets; Texas Ratio (NPL plus REO divided by equity plus ALL Reserves); Provision to NCO's; Coverage Ratio (Reserves to NPL)
- **Other**: Net loans to Total Assets; Asset Growth Rate; Net Interest Margin (Net interest income divided by Average Earning Assets); Int Earnings Assets/Int Bearing Liabilities
### Industry Metrics

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<td>Number of Institutions</td>
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<td>5,677</td>
<td>5,913</td>
<td>6,182</td>
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<td>Number -New Reporters (denovo)</td>
<td>8</td>
<td>5</td>
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<td>1</td>
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<td>31</td>
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<td>Number Mergers</td>
<td>259</td>
<td>230</td>
<td>231</td>
<td>304</td>
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<td>5</td>
<td>8</td>
<td>157</td>
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<td>Industry Profit/Loss</td>
<td>237B</td>
<td>166B</td>
<td>172B</td>
<td>163B</td>
<td>85.5B</td>
<td>(9.98)</td>
<td>4.5B</td>
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<td>ROA</td>
<td>1.35</td>
<td>.97</td>
<td>1.84</td>
<td>1.04</td>
<td>.65</td>
<td>(.08)</td>
<td>.03</td>
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<td>ROE</td>
<td>11.98</td>
<td>8.64</td>
<td>9.32</td>
<td>9.29</td>
<td>5.65</td>
<td>(.73)</td>
<td>.35</td>
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<td>Net Interest Margin</td>
<td>3.45</td>
<td>3.31</td>
<td>3.11</td>
<td>3.07</td>
<td>3.76</td>
<td>3.48</td>
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<td>Efficiency Ratio</td>
<td>56.27</td>
<td>57.94</td>
<td>58.28</td>
<td>59.93</td>
<td>67.17</td>
<td>55.53</td>
<td>59.35</td>
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*Note: Number of institutions 1984=17,901*

### Industry Metrics, cont'd

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<td>Earning assets to total assets</td>
<td>90.59</td>
<td>90.50</td>
<td>90.07</td>
<td>89.97</td>
<td>86.76</td>
<td>86.1</td>
<td>84.87</td>
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<td>Loans to Deposits</td>
<td>72.3</td>
<td>71.6</td>
<td>71.2</td>
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<td>75.8</td>
<td>76.4</td>
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<td>Yield on earning assets</td>
<td>4.07</td>
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<td>3.46</td>
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<td>Cost of funds</td>
<td>.68</td>
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<td>.37</td>
<td>.33</td>
<td>.94</td>
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<td>Net Charge-offs to Loans</td>
<td>.48</td>
<td>.56</td>
<td>.47</td>
<td>.44</td>
<td>.25</td>
<td>2.52</td>
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<td>ALLL to loans</td>
<td>1.23</td>
<td>1.27</td>
<td>1.30</td>
<td>1.34</td>
<td>3.14</td>
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<td>2.21</td>
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<td>Loan Loss Provision to Assets</td>
<td>.28</td>
<td>.30</td>
<td>.29</td>
<td>.24</td>
<td>1.19</td>
<td>1.88</td>
<td>1.33</td>
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<td>Non Interest Income to Assets</td>
<td>1.48</td>
<td>1.59</td>
<td>1.54</td>
<td>1.42</td>
<td>1.78</td>
<td>1.96</td>
<td>1.06</td>
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<td>Assets per Employee (in millions)</td>
<td>8.68</td>
<td>8.39</td>
<td>8.18</td>
<td>7.85</td>
<td>6.38</td>
<td>6.34</td>
<td>6.43</td>
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<td>Tier One Leverage ratio</td>
<td>9.70</td>
<td>9.63</td>
<td>9.48</td>
<td>9.59</td>
<td>8.89</td>
<td>8.60</td>
<td>7.47</td>
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</table>

Impact of Tax Reform: about $21.6 Billion lower 4th quarter earnings.
**Uniform Bank Performance Report (UBPR) – warning lights are underlined**

- Cover Page Peer Information
- Page 1 Summary Ratios - Number of Banks is Peer
- Page 2 - Income Statement in $$$
- Page 3 Non-Interest income and Expense Yields /Costs
- Page 4 - Balance Sheet in $$$
- Page 5 - Off Balance Sheet Items
- Page 5a - Derivative Instruments
- Page 5b - Derivative Analysis
- Page 6 - Balance Sheet Percentage Composition
- Page 7 - Credit Allowance and Loan Mix

**UBPR Warning Lights, Continued**

- Page 8 - Past Due, Non-Accrual, Restructured Loans
- Page 9 - Interest Rate Risk
- Page 10 - Liquidity and Funding
- Page 11 - Capital Analysis
- Page 12 - One Quarter Annualized income Analysis
- Page 13 - Securitization and Asset Sale Activity
- Page 14 - Fiduciary and Related Services
- At bottom of Table of Contents - State Averages
Day Three: A Deeper Dive into Ratios and Peer Analysis

- Review of Key Performance Ratios Discussed Yesterday
- UBPR Exercise
- Open Discussion Questions:
  - Is a low Efficiency Ratio always "good"? When would you find a higher ratio acceptable?
  - Another bank's Noninterest Income is much higher than mine...am I doing something wrong?
  - What should I conclude from a high Loan-to-Deposit ratio? Describe possible strategies, problems, or opportunities if the ratio is low.
  - My Personnel Cost/Total Assets is higher, but my Total Assets/FTE is lower? Should I demand HR cut salaries across the board?
  - Select a few key ratios: compare the expected levels relating to ROA, NPA, Capital, Reserves, Loan Yield and Liquidity, between a bank under a consent order, versus a "high-performer"
UBPR Demonstration/Exercise

- Click to open the Search page
- Select a State, or States
- Select the “target” bank (that is, your bank, or the bank you’d like to analyze)
- Select the time periods (default is most recent Call Report date, and four previous)
- Click Generate Report
- Pages down the left side, can Print or Download

Case Studies

- A look at three Florida based community banks with very different strategies:
  - Slow to branch out, conservative lending- a S corp community bank
  - Relatively high efficiency ratio, offset by noninterest income
  - Very low loan-to-deposit ratio, very low deposit funding cost, strong results
- Key Point-careful in looking at one or two ratios in isolation; consider the strategy
Case 1

- Florida bank with about $2 billion in total assets, of which $500 million is loans, and $1.2 billion is investment securities; this bank has approximately $1.7 billion in core deposits
- Calculate the loan to deposit ratio – good or bad to peers?
- Share your thoughts...good or bad?
- The rest of the story.....
Case 2: Loan Yield Decisions

Beasley National Bank & Trust, Orlando, FL

Is our loan pricing too low, or is there more to the story?

Loans Volume

<table>
<thead>
<tr>
<th>Family of Lending Areas</th>
<th>Loans end Year end</th>
<th>Loans end Year end</th>
<th>YTD</th>
<th>National Percentile</th>
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<tr>
<td>Select Peer Group</td>
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impact Summary

Differential: 1.15%
Core (Balt): 0.25%

Banker's FIserv

Saltmarsh

2/25/2019
Another look, supports picture of high asset quality; sound strategy is accepting a lower yield for a better quality asset.

Loan Repricing

What about repricing and interest rate risk?
Pretty consistent, average loan life in mid four years...note longer for other FL banks.
Seaside National Bank & Trust, Orlando, FL

Loan Repricing

<table>
<thead>
<tr>
<th>Year-end</th>
<th>Peer Group</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
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<tr>
<td>Year-end</td>
<td>Non-Sba Loan Group</td>
<td>6.50%</td>
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<td>Year-end</td>
<td>Sba Loan Group</td>
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<td>Year-end</td>
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Loan mix, biggest concentration is commercial loans...great opportunity to cross sell other products

Commercial Loans

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Impact Summary

Classification: Not Classified
Differential: 15.17%
Basis (BP): 140
Status: Clear
Next strategic opportunity...very good CRE capacity in a good CRE market...

Seaside National Bank & Trust, Orlando, FL

Commercial Real Estate

Case 3: Branch Decisions

Intercoastal Bank, Palm Coast, FL

Case 3: Branch Decisions

Intercoastal Bank, Palm Coast, FL

Fixed Assets

Averages Prescribed & Fixed Assets to Average Assets

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<td></td>
<td>2.11%</td>
<td>2.05%</td>
<td>2.02%</td>
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<td>2.06%</td>
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<td>2.09%</td>
<td>2.12%</td>
<td>2.15%</td>
<td>2.21%</td>
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<td>Select Peer Group</td>
<td>2.20%</td>
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<td>2.37%</td>
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</tbody>
</table>

Impact Summary

Classification: Weak

Earnings: 0.77%
Cost of Equity: -0.06%

Prepared by 1/1/2015

Day Four: Other Considerations, Including IRR, Liquidity Risk, and ERM

- Relationship between IRR, Liquidity Risk and Credit Risk
- As bankers, we are Risk Managers, and are expected to understand the risk we propose taking with the shareholders’ money
- Managing Performance is how we monitor and manage the risk positions we take

Overview of Major Risks

- ERM, and the big three: Credit, Interest Rate, and Liquidity Risks
- Discuss the key considerations of interest rate risk and liquidity risk
- Define Key terms used in IRR
  - NII (Earnings as Risk)
  - EVE (Economic Value of Equity)
  - GAP (normally measured at 1 year)
Purpose in Modeling for IRR and Liquidity Risk

- Manage a bank’s sensitivity to changes in market interest rates
- Identify potential weakness in asset/liability mix, and funding risks
- Achieve an acceptable risk of change in net interest margin or economic value of equity
- Plan, organize, control asset and liability volume, mix, maturity, rates and funding sources, considering the possible changes in external forces and conditions

Definition of IRR

- The Risk to Earnings and Capital from Movements in Interest Rates
  - Price Risk
    - Rate changes impact the bank’s ability to maintain a consistent NIM, impact the market values of bank’s assets and liabilities (and therefore, its value of equity); this risk include the risk associated with changes in prepayment speeds
  - Basis Risk
    - Risk that spreads over key index rates of various assets or liabilities may fluctuate, normally due to market conditions, which can impact the market value of those assets and liabilities
  - Yield Curve Risk
    - Market rates often change by different amounts, by maturity; the “shape” of the yield curve changes due to investor expectations
Why the focus on IRR and Liquidity Management?

- Remember the key activity of banks: take in deposits and funding, invest those funds in loans or other earning assets, live off the difference between interest income and interest expense
- Net interest income is 70 to 90 percent of most community banks’ earnings.
- Value of Capital is also at risk due to changes in market interest rates, because the market value of capital is driven by the underlying cash flows from the bank’s mix of assets and liabilities, discounted back at current market rates
- Liquidity levels are closely tied to interest rate movements, as the bank’s liquidity cost represents the cost to fund the assets acquired. Liquidity management must be coordinated with interest rate risk management, along with consideration of external market forces that may impact liquidity.

Regulatory Focus: IRR and LIQ

- Regulatory Consideration
  - Separate component of CAMELS rating; IRR and Liquidity represent two of the six letters, with an obvious tie also to the “E”.
  - Increasing regulatory training, and scrutiny on Management’s ability to manage and monitor IRR and Liquidity Risk;
  - Significant focus on Modeling in general.
  - Significant focus on Corporate Governance (Board and ALCO involvement, oversight and training
Quick Review of GAP Analysis

- Tool that's been used a very long time by bankers
- Attempts to indicate the bank's ability to reprice its assets and liabilities in tandem
- Normally at the one-year time horizon
- Steps in GAP Analysis:
  - Organize earning assets and liabilities in "time buckets" for expected maturity/repricing
  - Divide the assets expected to reprice within one year by the liabilities expected to reprice within one year
- Define "asset sensitive" and "liability sensitive"
- Discuss limitations of GAP Analysis

More on GAP Analysis

- Dollar gap (GAP) = RSA - RSL
  - RSA = rate sensitive assets
  - RSL = rate sensitive liabilities
- Interest sensitivity ratio = RSA/RSL
- Cumulative gap: sum of incremental dollar gaps; one year is most common time horizon
- If one year GAP (RSA>RSL) is Positive:
  - "Asset Sensitive"
  - Market Rates Up: NIM Up; Market Rates Down, NIM Down
- If one year GAP is Negative (RSA<RSL):
  - " Liability Sensitive"
  - Market Rates Up: NIM Down; Market Rates Down, NIM Up
- Converting GAP to Net Interest Margin Risk
  - Net Interest Margin Risk = 12 month Cumulative Gap Dollars/RSA Dollars*100 (in basis points of the Margin)
Simulation Analysis- a better tool

- While GAP is a handy, "hip pocket" tool, it ignores:
  - Ability to model prepayment behavior
  - Assumes market rates move in parallel
  - Ignores embedded options, as well as Management's ability to react to market changes

- Typical embedded options common to a bank:
  - Customer option to repay a loan early
  - Issuer's call option on some bonds
  - FHLB (others) call option on advances and borrowings
  - Customer's option to withdraw deposits
  - Caps and floors on adjustable loans

Overview of Typical ALM/IRR and Liquidity Simulation Models

- Common Practices:
  - Most banks outsource to a model vendor; models normally get raw data from the core processor, as well as the bond accounting reports; data is normally at the loan and deposit level, and by CUSIP for securities
  - Some banks use a simpler, Call Report type model
  - Either way, Management must select key assumptions, with ALCO and Board review and approval, and set policy limits for key ratios
  - Almost always run off quarterly data, using calendar quarters
  - Regulators expect sound vendor management process
Types of Models

- Call Report versus Account level
- Dynamic versus static model
- Parallel versus non parallel rate shocks
- Ramps or immediate rate shocks
- EVE: create a “marked to market” balance sheet as a base case, then adjust for impact of rate shocks, comparing the impact on EVE
- Liquidity Modelling: cash flow forecasting, usually with three or more “scenarios”, usually integrated with ALM/IRR valuations

Typical Key Assumptions

- Deposit Decay Rate
  - Estimate of the average life of nonmaturity deposits
- Beta
  - Estimate of how much the bank will have to “match” changes in market interest rates
- Prepayment speeds
  - Estimate of when and how quickly, borrowers will pay off when market rates change
- Current Pricing (Reinvestment Rate)
  - Most banks assume new loans and deposits will be priced based on the bank’s current offering rates
- Issue: to use the bank’s specific data, or peer?
Other Modeling Considerations

- For IRR, regulators expect measuring for rates up and down, up to 400 bp, with policy limits for maximum acceptable decrease in NII and EVE at each level
- NII or Earnings at Risk must be measured using a minimum of a two-year time horizon (five years is best practice for many banks, due to adjustable rate loans and caps/floors features on loans)
- Policy Example:

<table>
<thead>
<tr>
<th>Change in Rates</th>
<th>Limit on Decrease in NII</th>
<th>Limit on Change in EVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>+/-100 bp</td>
<td>-8%</td>
<td>-10%</td>
</tr>
<tr>
<td>+/-200 bp</td>
<td>-10%</td>
<td>-15%</td>
</tr>
<tr>
<td>+/-300 bp</td>
<td>-12%</td>
<td>-20%</td>
</tr>
<tr>
<td>+/-400 bp</td>
<td>-15%</td>
<td>-25%</td>
</tr>
</tbody>
</table>

Adding Complexity

- When would a bank use hedging?
- When would a bank use interest rate swaps?
- What are off-balance sheet positions, and do they impact my IRR and LIQ risk profile?
- How are those modeled?
- Another way to measure IRR sensitivity- Duration (measure of price sensitivity to market rate changes)
- For Liquidity, includes external crisis scenario (for example, hurricane)
Brief Update on Models

- Get Used to Modeling: The Need for Models
- What Models Are Common for Banks
- What are the Risks in Using a Model
- How to You Manage the Risk of Modeling
- Overview of Model Validation Process

Top Uses for Models in Banking

- ALM/IRR Modeling for ALCO
- Liquidity Modeling
- ALLL Modeling, Preparing for CECL
- Overall Stress Testing, such as Large Bank Stress Testing for Systemically Important Institutions
- AML/BSA Modeling for Identifying Transactions
Role of Model Validation

- "Trust, but verify"
- Regulators may like your policy, recognize the vendor or model you plan to use, acknowledge the reasonableness of your key assumptions and limits, and believe that your process for identifying potential problem transactions may be comprehensive...
- But how do you get comfortable that the processing "in the black box" is actually working?

Model Validation

- Overview of Model Validation
- Three Major Aspects of Model Validation
  - Data Integrity – Are we getting the right data into the model?
  - Key Assumptions Integrity – Are the key assumptions approved, actually being used in the model?
  - Model Process Integrity – Does the model actually process the data as represented? Does the "math" work?
Modeling Internal Controls

- Who has control and access to the model?
- Who can change the way the model works?
- Who can control the model inputs?
- Who can control the model assumptions?
- If assumptions are approved by Board, who actually inputs the assumptions?
- Who controls the model outputs, can they suppress the reports?

ALM/IRR and Strategy

- Example- Bank earning 1% ROA, Rates go up by 200 basis points and NII (net interest income) goes down by 15%
- If NII is 80% of the bank’s earnings then ROA just went down to approximately 0.88% (and, what about prepayment risk, and the impact of market values and capital?)
- Is that acceptable? (Most bank’s policies would allow that much of a drop in NII without any corrective measures required if their models and policy limited indicated that possibility)
- Impact on ROE? Is that acceptable to shareholders?
Is IRR really a problem?

- What if the change in rates was more severe, and the impact threatens capital levels, ability to pay dividends, and regulatory scrutiny (threatening the E and the C)? Has this ever happened before?
- The Thrift crisis in the 1980’s
  - Interest rates shot up causing interest expense to increase much faster than interest income, while the opportunity to reprice loans diminished, as prepayments slowed
  - Fair market value of earning assets declined as rates moved up
- Result: hundreds of thrifts failed due to liquidity, earnings, and ultimately capital issues

How about now?

- Could this happen again?
  - Current situation: Many community banks have extended maturities on investment securities as loan demand was slow and banks searched for additional yield
  - Banks have enjoyed significant growth in non-maturity deposits ("surge deposits?"); when planning, do you think the past ten years are a good proxy for what to expect from deposit customers over the next ten years?
- Do you think rates are going to rise in the next year? Fall? Stay the same?
- Most bankers have a bias for which way they think rates will move and manage the bank in that direction
- However, good bankers do not bet the bank on the direction of rates
- This discussion is not academic – you will face making a decision during the Simulation exercise...and, as you manage your bank
Summary of Considerations

- Earnings Focus:
  - Managing the bank’s asset-related cash flows relative to its liability-related cash flows
  - Managing the bank’s net interest margin, with an understanding of its volatility
- Key Questions and Discussion Points:
  - Are assets and liabilities matched?
  - Does the timing of cash flow adjustments match on both sides of the balance sheet?
  - GAP, Earnings Sensitivity and Liquidity Analysis are tools to measure and monitor IRR and LIQ risk, both of which are key risks in setting the bank’s strategy

Day Five: Summary, Wrap-Up, and Review of Test Questions

- Key Point: understanding the key components of the Bank Balance Sheet and Income Statement, and the related Key Ratios that can be derived from them, helps us understand our bank’s risk profile, relative performance, what we’re doing well, and what requires our attention to improve
- Great strategic planning begins with understanding the various risks the Bank faces or may face and having clear expectations about our risk appetite
- Ratio analysis, and proper peer analysis, allows us to monitor and be aware of the “warning lights”
- Understanding the numerator and denominator of key ratios, provides the clarity about how best to move forward
- Key strategic quote: “It is always more productive to fully exploit a strength, than to marginally improve a weakness”. .
A Word about Corporate Governance...

- Board’s Role in Managing Bank Performance
  - Set and Clearly Communicate the Risk Appetite and Expectations, and Ensure the Strategic Plan as well as Board Policies and Limits Are Consistent with the Risk Appetite
  - Ensure Management has the appropriate Authority and Resources to execute the Plan
  - Provide oversight through consistent, periodic monitoring of compliance with limits and policies

Corporate Governance, cont’d

- In the context of ALM/IRR/LIQ and Managing Bank Performance, that includes:
  - Board understanding basic concepts, reviewing and approving key assumptions made, reviewing and monitoring key ratios against Board approved limits, as well as comparison to peer and industry metrics
  - Regulators expect Board’s to have a basic understanding of performance metrics and modeling practices
  - Such understanding, and monitoring should be documented in meeting minutes
- How to get a 3 in L or S in your CAMELS rating (just don’t bother documenting....)
If only.....

- If I were a director,...I'd hate 200 page Board packages.
- I'd want someone to go through all the Bank policies I approved, list all the policy limits, put the list on a worksheet with the policy limit in the first column, the current month actual next to it, the previous two months next to that, and the prior year last
- Maybe I'd like a column with Y or N, indicating whether we were within the limit
- If it's not too much...could it be one sheet of paper?
- Key question: after all we've talked about this week, how can we make this useful, and avoid drowning in a sea of data?

Questions or Comments?

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